NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20603.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Watts Bar Nuclear Plant - Unit 1	05000390	1 OF 14

TITLE (4)

DIESEL GENERATOR FUEL OIL TRANSFER HANDSWITCHES

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
12	05	97	97	016	00	12	24	97	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)	100		20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
			20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
			20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
			20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
			20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Rickey A. Stockton, Licensing Engineer	(423)-365-1818

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On December 5, 1997, with Unit 1 operating at 100 percent reactor power, two Emergency Diesel Generator (EDG) 2B-B fuel oil transfer handswitches were found in the "OFF" position rather than the required "AUTO" position. As a result, this condition would have prevented fuel oil transfer pumps from starting and pumping fuel to the tank used to supply fuel to EDG 2B-B. This condition resulted in the EDG 2B-B being technically inoperable. It is important to emphasize that this condition would not have prevented EDG 2B-B from performing its function had a signal to start been received. The control room would have received an alarm due to low level in the fuel oil tank. Ample time exists to dispatch personnel to the Diesel Generator Building to correct the problem.

The specific cause of this condition could not be determined. However, it was concluded from the investigation that the most likely cause was an unintentional mispositioning during other work activities. As a result, EDG 2B-B was technically inoperable for a unknown period of time (although not likely, it is possible it was as long as from November 25, 1997 through December 5, 1997). This amount of time would exceed the Technical Specification limitation of 72 hours. Therefore, this condition is conservatively being reported under 10CFR50.73(a)(2)(i)(B) as a condition which is potentially in violation of the Technical Specification.

Corrective actions consist of specific training for operations personnel, standdown meetings for site employees, and additional management monitoring and oversight of operational activities.

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TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

I. PLANT CONDITIONS:

Watts Bar Nuclear Plant Unit 1 was operating in Mode 1 conditions during the course of the diesel generator fuel oil transfer handswitches being in the wrong position.

II. DESCRIPTION OF EVENT

A. Event

On December 5, 1997, at approximately 1:00 p.m. while operating in Mode 1, the handswitches for both fuel oil transfer pumps for the 2B-B Emergency Diesel Generator (EDG) were discovered in the OFF position by an NRC inspector during a plant walkdown. The NRC inspector questioned the system engineer about why 2B-B EDG fuel oil pumps were turned off. The engineer investigated and could find no reason so he called the control room. Operators were dispatched to the EDG Building to return the fuel oil pump handswitches to the "AUTO" position.

Technical Specification Surveillance Requirement 3.8.1.6. requires the verification of the ability to automatically transfer fuel oil from the seven-day storage tank to the skid-mounted day tank. Because this surveillance could not have been met in the as-found condition, WBN considers the 2B-B EDG to have been technically inoperable at the time of discovery. (Note: As discussed later, EDG 2B-B could have automatically started and loaded and run for approximately six hours without operator intervention.)

System Design

Each tandem EDG has a "seven-day tank" (consisting of four interconnected tanks) embedded into the EDG building foundation with sufficient capacity to operate the EDG for seven days. There are two 550 gallon skid-mounted day tanks for each tandem diesel generator, one for each engine, which provide fuel oil to the respective engine using shaft-driven and motor-driven fuel oil pumps during EDG operation. Each engine day tank has an associated electric fuel oil transfer pump which supplies fuel oil from the seven-day tank to both day tanks. By design, the manner in which the day tanks are cross-connected results in the operating fuel oil transfer pump filling its respective day tank at a faster rate than the other day tank. Level switches are provided in the day tanks to provide an automatic start of the fuel oil transfer pumps on low level and automatic stop on high level. The automatic transfer of fuel from the seven-day tank to the day tanks should occur approximately one hour after beginning EDG operation, but this time will vary based on the loading and initial day tank fuel oil levels of the EDG.

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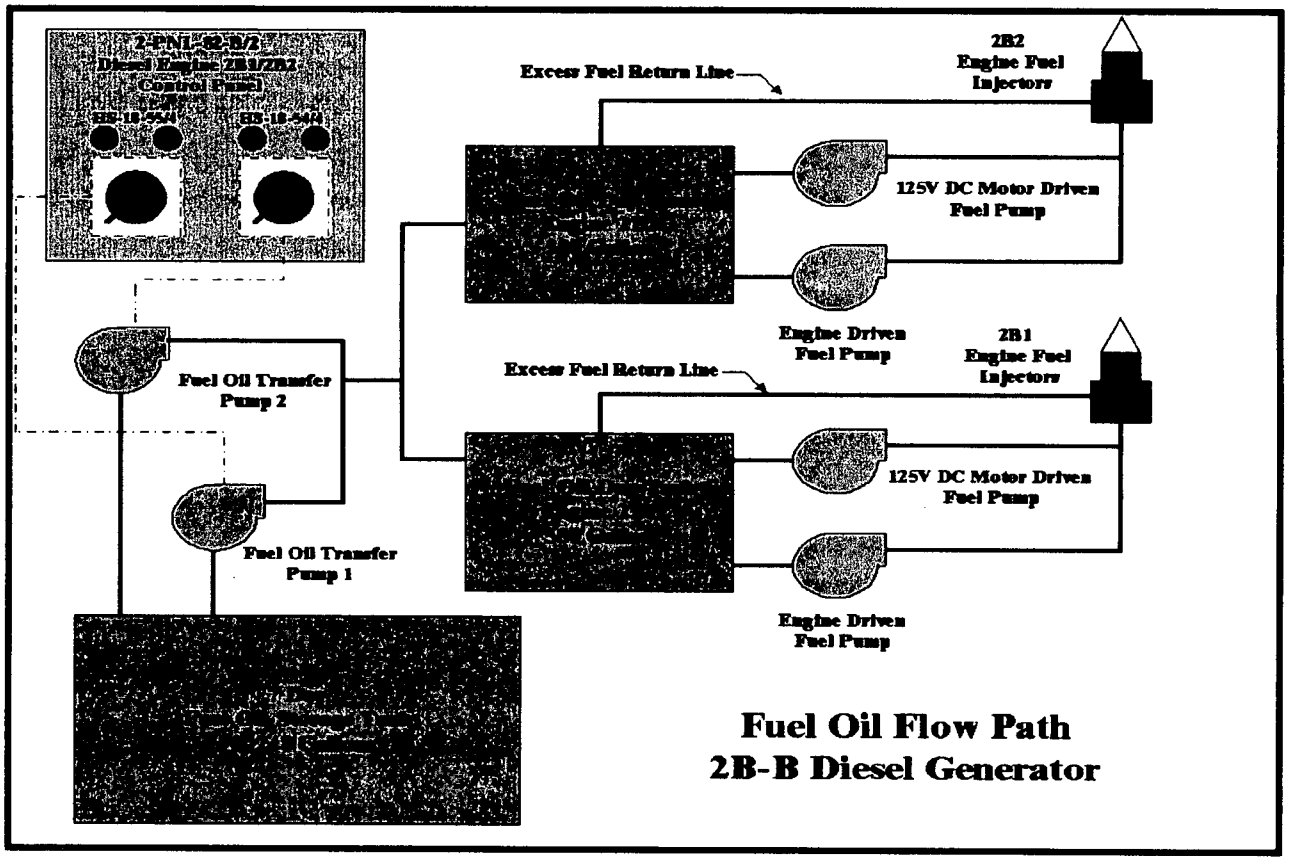
TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

II. DESCRIPTION OF EVENT (continued)

A sketch of the system layout is provided below:



The fuel oil transfer system incorporates redundant design features to ensure that one pump will automatically start and supply both day tanks in the event the other pump experiences a failure. In the event that a complete failure of the fuel oil transfer system occurs (such as in the subject condition with both switches in OFF), a low level alarm provides main control room (MCR) annunciation with sufficient fuel oil remaining in the day tanks to operate at full load for one hour or more based on EDG loading.

As directed by the MCR annunciator response instructions, and as discussed in the Tech Spec Bases, an operator would be dispatched to the EDG room and have sufficient time to take corrective action to prevent the loss of the EDG.

B. Inoperable Structures, Components, or Systems that Contributed to the Event

There were no other inoperable structures, components, or systems that contributed to the event beyond the fuel oil transfer switches.

C. Dates of Discovery and Reportable Findings

This condition was discovered on December 5, 1997.

D. Other Systems or Secondary Functions Affected

Since the fuel oil transfer pump handswitches were found to be in the wrong position which results in EDG 2B-B being technically inoperable, the investigation reviewed other equipment outages during the time period between November 25, 1997 through December 5, 1997. The results are discussed below in Section IV.

E. Method of Discovery

This condition was identified by an NRC Resident Inspector during a plant walkdown.

F. Operator Actions

See the discussion under the Cause of Event Section below.

G. Automatic and manual safety system responses

There were no automatic or manual safety system responses as a result of this condition.

III. CAUSE OF EVENT

Event Investigation

Upon discovery of the mispositioned switches, WBN conducted a thorough review of recent work records to identify any possible activities on the alarm panel where the switches were located. Two recent activities were identified. The first was the monthly 2B-B EDG surveillance on November 25, which included a test of the ability for the transfer pumps to auto start. The second item was a check valve test of the EDG air start system on November 26, which manipulated the switches adjacent to those found out of position. The site personnel involved in these activities were interviewed, and WBN could not confirm that the mispositioning occurred as a result of either of these activities. The air start activity included an independent verification of switch positions. However, as discussed below, TVA identified that the performance of the 2B-B EDG surveillance did not meet management expectations for configuration status control and that corrective actions are required to address the performance of that surveillance.

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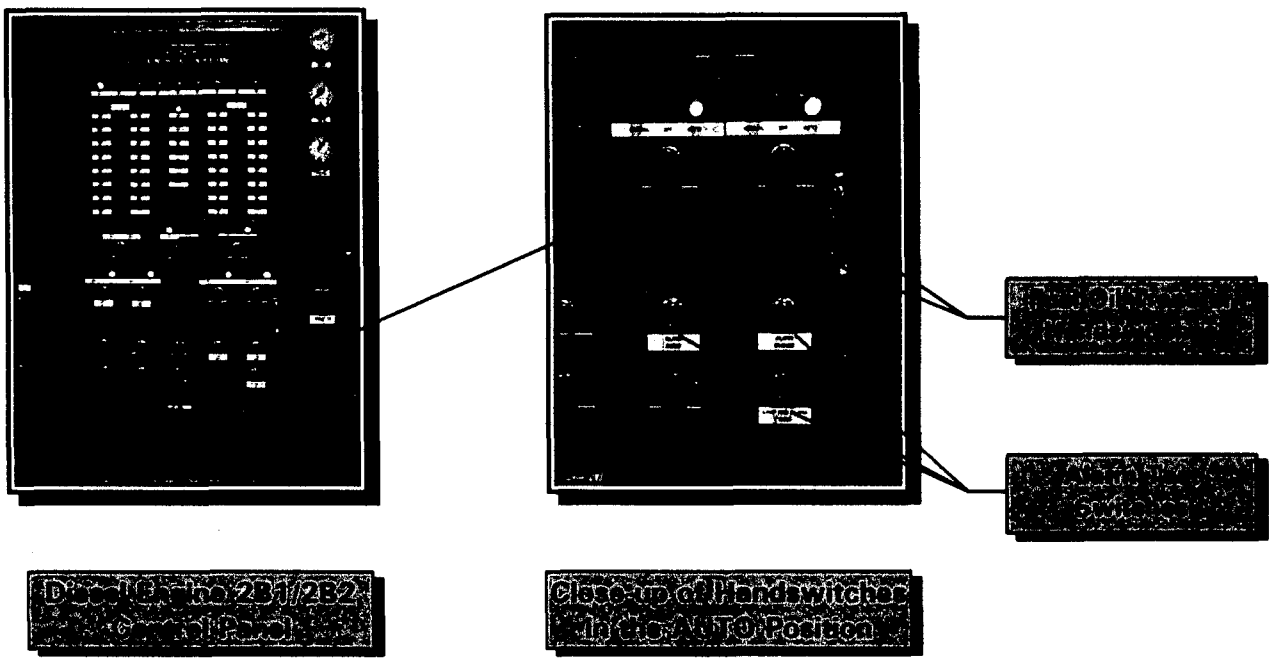
TVA interviewed the individual non-licensed AUOs involved in the performance of the surveillance on November 25. It was determined that one of the AUOs had performed a manipulation of one of the switches which was not consistent with management's intent for test performance. The operator indicated, however, that he remembered leaving the switches in the AUTO position. As can be seen from the following photographs, the lights on the panel switches provide a clear indication of position that could not be overlooked by the AUO who manipulated the switches. In addition, the as found condition of the 2B2 tank with a 15/16 level indicates that transfer pump 2 most likely ran in AUTO until its high level cutoff point was reached. Thus, there would be no reason to change the position of the number 2 transfer switch from AUTO. However unlikely, it is a possibility that instead of returning the first switch from STOP to AUTO, the AUO turned the second switch from AUTO to STOP. This single action would have established the as-found condition.



Performance of a 2B-B Diesel air start system check valve test performed about 15 hours after the fuel oil tests, manipulated adjacent switches on the same panel. Interviews with the involved AUOs indicated that their recollection was that the green (AUTO) handswitches lights were lit. Further, RONAN alarm printouts for checks performed during operator rounds for 10 consecutive days confirmed that AUOs used the alarm panel test buttons, a few inches from the mispositioned switches during rounds to check the panel alarm lights. It is not credible to consider that 10 consecutive days of these activities failed to identify the fuel oil switches lights being unlit.

A review of a list of other work (7 work orders) on adjacent EDGs (in the same building) did not identify any activities which could reasonably impact the 2B-B EDG.

Because no work items could be identified that could have resulted in reconfiguring the switches, WBN conducted a review of the security logs which records entry into the building. Between November 25 and the discovery of the switches by the resident inspector on December 5, 70 individuals had made approximately 230 entries into the building. These individuals included 16 operations/fire operations personnel, 24 maintenance personnel, 3 chemistry technicians, 22 facility security guards for security rounds or door checks, and 5 engineers or managers. Site departments have reviewed the lists of entries, and the preliminary review did not identify any unusual activities. It would also seem unlikely that an individual wishing to tamper with equipment would choose a location which is closely monitored for access by the security system. Accordingly, WBN does not consider that the possibility of intentional tampering with these switches is likely or that there is a likely end objective for tampering.

Conclusion

As a result of the review to date, WBN has concluded that the specific cause of the mispositioned switches cannot be determined. Although it is technically possible for the mispositioning to have occurred during the November 25 surveillance, the most likely cause is an unintentional mispositioning during other work activities.

During the investigation, WBN identified an instance where a site procedure was not followed. Performance in this case does not meet the standards expected for the Watts Bar plant. WBN management has taken strong action to identify and promptly correct these deficiencies as described below. These actions will also address the likely cause of an unintentional mispositioning during other work activities.

Use Of "Alternate Test Methodology"

During this review, TVA identified an operator error during the performance of Surveillance Instruction 0-SI-82-12-B, "Monthly Diesel Generator Start and Load Test on 2B-B EDG," on November 25, 1997. The manner in which this surveillance instruction was performed resulted in equipment manipulations without specific procedural guidance.

TVA considered whether the operator could have made an error in returning the fuel oil pump hand switch to "AUTO" and turned off the other pump during this time. However, as described below and based on the statement of the AUO and the confirmations provided by the RONAN printouts of alarm multiple panel checks, this was not considered likely.

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Background - Surveillance Testing

Surveillance Instruction (SI) 0-SI-82-12-B, "Monthly Diesel Generator Start and Load Test on 2B-B EDG," performs testing of several EDG attributes including the one-hour start and run performance, and includes the verification of fuel oil transfer system operability per Tech Spec surveillance requirement (SR) 3.8.1.6. This SI is one of four SIs which are staggered such that one EDG is tested each week. The fuel oil transfer portion of the SI is configured to allow its performance in parallel with the one-hour run to take advantage of the fuel consumption and tank level reduction in order to verify the automatic operation capability of each fuel oil transfer pump. The SI requires that both transfer pump switches be confirmed in AUTO and does not specify any further manipulation of these switches.

The actual text of the pump performance portion of the SI is as follows:

[10] ENSURE 2-HS-18-55/4, DG 2B FUEL OIL DAY TANK TRANSFER PUMP 1 (2-PNL-82-B/21) is in AUTO. _____

[11] ENSURE 2-HS-18-54/4, DG 2B FUEL OIL DAY TANK TRANSFER PUMP 2 (2-PNL-82-B/21) is in AUTO. _____

NOTE: Fuel transfer from 7 day tank to Engine 1 and 2 day tanks should occur approx. 1 hour after DG start.

[12] MONITOR 2-LI-18-111/4, DGDT 2B1 LEVEL, and

VERIFY Engine 1 Fuel Oil Transfer Pump starts, and transfers fuel to day tank. (Acc. Crit.) _____

[13] MONITOR 2-LI-18-112/4, DGDT 2B2 LEVEL, and

VERIFY Engine 2 Fuel Oil Transfer Pump starts and transfers fuel to day tank. (Acc. Crit.) _____

Depending on initial day tank levels (one is usually lower than the other), operation in AUTO results in the following typical sequence during performance of the SI:

- Tank 1 reaches low level setpoint and auto-starts its associated Pump 1
- Tank level increases on Tank 1; level stays nearly constant on Tank 2 due to lower fill rate and continued consumption of fuel
- Auto stop of Pump 1 on high level in Tank 1
- As the diesel continues to operate, a gradual level reduction of both tanks occurs with Tank 2 having the lower level
- Automatic start of Pump 2 when Tank 2 reaches its low level setpoint
- Automatic stop of Pump 2 on high level in Tank 2

In this manner, the required verification of automatic operation of the fuel oil transfer system is performed by monitoring tank levels. Once the first pump starts, the test requires verification of a level increase on its associated day tank and then the test requires the other tank to be monitored for the same criteria. Depending on initial day tank levels, performance of the SI in the manner described above may require extended operation of the diesel generator, well beyond the required 1-hour performance run. This is due to the draining, filling, and re-draining sequence necessary to demonstrate automatic operation of both transfer pumps.

Alternate Methodology

A change in methodology had been recognized by some operations test personnel which would shorten the test, conserve fuel oil, and still provide what was thought to be an acceptable method of performing the test. Instead of leaving both switches in AUTO, it was recognized that the first pump could be stopped (switch placed in OFF) after demonstrating its auto-start capability with corresponding level increase, allowing the second pump to be verified to auto-start upon its tank reaching a low level. In this manner, the second tank would reach its low level auto-start setpoint sooner than with both switches in AUTO. Over time, this approach became routine with some performers of the test who did not recognize this methodology represented a condition outside the procedure. Although, performance of the test under this "alternate" approach would be technically acceptable, manipulation of the handswitches would challenge plant configuration control since the transfer pump handswitches had not been included on the procedure's realignment checklist.

November 25, 1997 Surveillance Performance

For the subject performance on November 25, 1997, the pre-test brief between the licensed test director UNIT OPERATOR and the non-licensed Assistant Unit Operators (AUOs) did not discuss a specific method of testing the fuel oil transfer pumps, other than to perform the test in accordance with procedure, 0-SI-82-12-B. The EDG was brought to full load and no problems were noted. The AUO verified the fuel oil transfer pump hand switches were both in AUTO as required by the procedure and began monitoring the day tank levels for automatic start of a transfer pump. The AUO was relieved by another AUO (who had also attended the pre-job brief) prior to the automatic pump start. The replacement AUO was familiar with the "alternate" method of performing the test discussed above, and turned off the first pump once it started. Interviews with this AUO indicated that he was confident that he had returned the handswitch back to AUTO once the second fuel oil pump started. He also thought the configuration was confirmed through the standby alignment process.

However, a positive means to verify return of the specific switches to AUTO had not been incorporated into the test since it was not anticipated that the switches would be manipulated. (Note that a realignment checklist was included in the test for other required equipment). The governing procedure for fuel oil pump switches is System Operating Instruction (SOI) 18.1, "Fuel Oil System." Incorporation of this SOI into the test logic would have required the switches to be placed in AUTO and independent verification performed. However, as noted, SOI 18.01 is not required to be performed after the EDG SI because it was not anticipated that the switches would be manipulated.

If the non-licensed operator mispositioned the fuel oil transfer switches, it would have required two separate errors and it would have been immediately obvious due to both the red and green lights not being lit. Although it is possible this was a cause of the mispositioned switches, it is not considered likely due to the obvious nature of the activity.

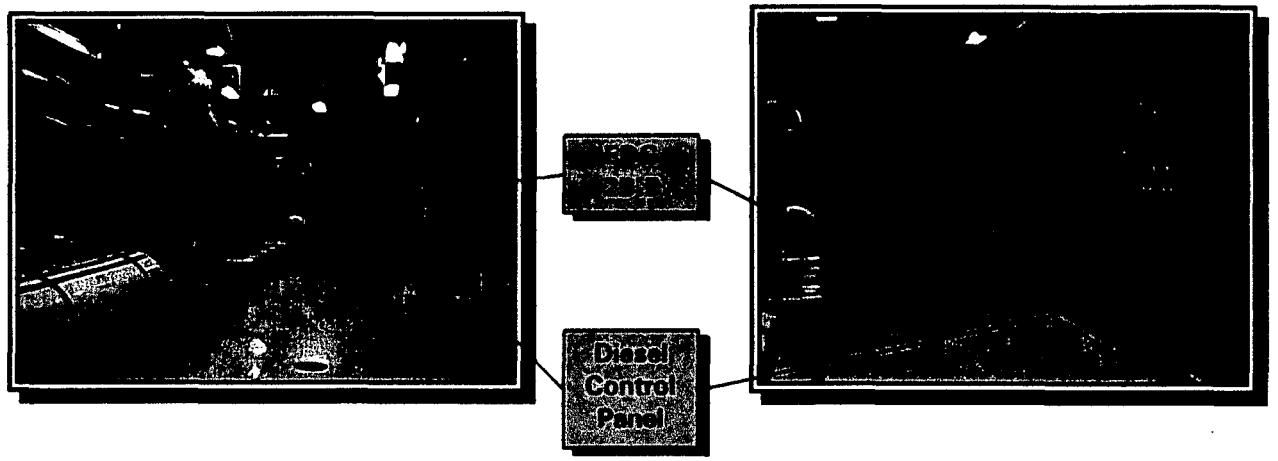
Supervision

For the EDG surveillance, a unit operator (RO) in the main control room is normally assigned as the test director. Most of the procedure steps are conducted in the EDG Building by AUOs. Interviews conducted with unit operators indicated that most of them were aware of the alternate test methodology. Some of them that had reviewed the specific steps of the procedure did not condone the practice and required the EDG to be run until both pumps started in auto. Others indicated that without a detailed review of the procedure steps, they did not recognize that this method was contrary to the intent of the procedure. It was generally assumed by these unit operators that the standby lineup provided sufficient configuration control. This assumption, however, was not confirmed to be accurate.

The system engineer was also aware that the fuel oil pumps had been stopped on an earlier performance of the surveillance. When this practice was challenged by the engineer, he was told the standby alignment provided the necessary configuration control. Management oversight of AUO activities and self-assessment activities have focused more on operator rounds and did not provide a good opportunity to identify this issue by oversight of EDG surveillance.

Performance of Non-Licensed Operator Rounds

Based on TVA's conservative initial assumption that the mispositioning might have occurred on November 25, 1997, a review of operator rounds between November 25 and December 5 was conducted. While it may have been possible for a single shift or even two shifts to have not noticed the lights being out, WBN does not consider it credible for 20 shifts to have missed the unlit position lights. Interviews with personnel regarding rounds were conducted. All personnel interviewed indicated that they would have noticed the switches in the wrong position, in addition to the lights not burning above the switches. As part of their rounds, the AUOs normally confirm panel alarm lights are operable by using a test push button. This button is only a few inches from the fuel oil switches. RONAN records show this testing was performed as least daily between November 25 and December 5. The following photographs show the room layout with the alarm panel in the right and EDG on the left:



Diesel Generator Compartment 2B-B
Views From Compartment Entrance Doorway Looking North

Extent of Condition

WBN has performed "table-top" examinations of selected procedures and reviewed procedure feedback forms to determine whether areas may exist where procedures can not be performed as written or where the procedure may inadvertently allow the performer too much latitude in the absence of discrete, specific instructions. The preliminary results of this review have identified several procedures which require correction or could be enhanced through the addition of more information. In the Operations area for example, of five selected safety-related monthly surveillance procedures, two errors and several enhancements were identified. These procedures included tests of Auxiliary Building Gas Treatment, Emergency Gas Treatment System, Safety Injection, Auxiliary Feedwater, Essential Raw Cooling Water, Reactor Protection, and Containment Spray. One example item identified involved a requirement to isolate/unisolate a sight glass without providing specific guidance. Items in these and other areas are being resolved. In addition, Operations has issued a Night Order to perform surveillance reviews as part of pretest briefings to identify potential instances where the test cannot be performed as written.

Configuration Status Control Performance

As part of the corrective action for a status control issue that occurred in September 1996, trending data for status control issues has been maintained since that time. This information continues to be periodically provided to management as a means to maintain oversight and awareness of status control issues. Based on this trending information, the overall significance of the incidents and the impact of personnel related incidents has decreased and remains on an overall improving trend. One indicator of this was that Operations' performance during the Unit 1 Cycle 1 (U1C1) refueling outage was good and significantly better than their performance during the mid-cycle outage (only two incidents identified). Maintenance related incidents increased during the U1Cl refueling outage. However, this was apparently related to the significant increase in both staff and activities, which were estimated to be greater than five times the non-outage activity level.

In order to confirm the test performance issue was limited in scope , a review was conducted of the procedure compliance data collected by Nuclear Assurance during the recent outage. That review found no procedure compliance issues during 95 observations of Operations and only two issues from 577 observations for the rest of the plant.

IV. ANALYSIS OF EVENT - ASSESSMENT OF SAFETY CONSEQUENCES

The EDG fuel oil transfer systems are integral safety-related subsystems for each of WBN's four required EDGs. The four EDGs provide an onsite emergency standby power source for the onsite Class 1E AC Distribution System for design basis accidents concurrent with a loss of offsite power and a worst case single failure. Four EDGs are required operable in Modes 1-4 such that two EDGs in the same power train (Train A or Train B) and the associated distribution system are capable of mitigating the accident. The design basis for the fuel oil transfer systems is to ensure the availability of a sufficient fuel oil capacity to operate each EDG for seven days while the EDG is supplying maximum post Loss of Coolant Accident (LOCA) load demand. Fuel is supplied to each tandem EDG from two 550 gallon skid-mounted day tanks, one tank for each diesel engine, with fuel capacity for approximately two hours at full load operation. Upon the diesel receiving an emergency start and after approximately one hour of full load operation, automatic makeup to the fuel oil day tanks is provided from the EDG's dedicated "seven-day tank" by two redundant 100% capacity fuel oil transfer pumps.

With the subject fuel oil transfer switches in the OFF position, automatic makeup to the 2B-B EDG day tanks would not have occurred. With the worst case assumption that the switches were in the incorrect position for up to 10 days, an engineering analysis has determined that this condition would have been unlikely to have any adverse affect on the safety of plant operations. The analysis examined the response of the 2B-B EDG from a defense in-depth perspective considering (1) operator response required by station emergency and alarm procedures, (2) actual accident loading on the 2B-B EDG, and (3) Probabilistic Safety Assessment (PSA) analysis of the changes in core damage frequency.

The subject condition would have had no impact on the ability of the 2B-B EDG to automatically start, sequence on emergency loads, and perform its required safety-related function at the onset of an accident. Each 2B-B EDG day tank is equipped with sensors which provide an alarm in the MCR upon reaching a low level. As discussed in the Bases of the WBN Tech Specs, the alarms annunciate with approximately one hour of fuel remaining in the day tank at full load operation, allowing the operator to correct the problem to prevent loss of the diesel generator. This alarm response is dictated by the applicable annunciator response instructions (ARI). Further, a failure of the alarm would not have impacted this result, due to requirements of the emergency procedures to dispatch an operator to the Diesel Generator Building in the event a start signal is received for the EDGs. TVA has reviewed operator responses to accidents which involve an emergency start of the EDG. That review determined that an AUO was dispatched to the Diesel Generator Building within 40 minutes or less. One of the specific functions to be performed upon arrival is to confirm proper operation of the EDGs. As discussed below, actual loading on the 2B-B EDG results in a lower fuel depletion rate from the day tank than the two-hour design bases value. Thus, the actual time available (though not needed) to restore fuel oil makeup would be substantially more than one hour.

An evaluation was performed for the 2B-B EDG rate of fuel consumption based on initial documented day tank fuel oil levels and the actual expected emergency loading (based on test data) for the diesel. This evaluation determined that without any operator intervention to re-establish day tank fuel oil levels, the actual capable run time for the 2B-B EDG, based on standard burn rates for the 2B-B diesel loading, would be approximately six hours before fuel starvation and loss of the diesel generator. This

is due to the 2B-B EDG having an actual accident loading significantly less than its full rated capacity. A review was conducted to determine whether any safety significant equipment fed from power sources redundant to the 2B-B EDG were out of service during the 10 day period the switches could have been misconfigured. The review did not identify any redundant equipment that exceeded the capable run-time of the 2B-B EDG, providing further confidence that the subject condition would not have impacted safe operations. It is noted that A-train ABGTS was out of service for approximately six hours on one occasion; however, because the EDG should have operated for this period, there would likely be no loss of function, even without expected operator action.

A further defense in-depth review was performed to determine the impact on the PSA Core Damage Model with the conservative assumption of losing the 2B-B EDG for the full duration from November 25 to December 5, 1997. The PSA model was evaluated assuming (1) the 2B-B EDG was out of service for 11 days, and (2) routine unavailability of other plant components for plant maintenance. The results of the model indicated an increase in core damage frequency of 1.0×10^{-7}. This increase would be considered "non-risk significant" in accordance with the EPRI'S PSA Application Guide.

In summary, the subject condition is considered not safety-significant and, therefore, the condition did not adversely affect the health or safety of plant personnel or the general public.

V. CORRECTIVE ACTIONS

A. Immediate Corrective Actions

As discussed previously, once identified, the operators placed the diesel generator 2B-B fuel oil transfer pump handswitches into the AUTO position. The comparable handswitches for the other diesel generators were then verified to be in the AUTO position.

B. Corrective Actions/Recurrence Controls

As discussed in the extent of condition section above, WBN has performed "table-top" examinations of selected procedures and reviewed procedure feedback forms to determine whether areas may exist where procedures can not be performed as written or where the procedure may inadvertently allow the performer too much latitude in the absence of discrete, specific instructions

The Assistant Plant Manager of Operations conducted crew stand-downs to discuss this event and its significance. The stand-downs include management expectations for observation of material condition of equipment during rounds and for procedure compliance. A key part of the stand-downs was a discussion of the specific control mechanisms for component manipulations.

Other WBN departments also conducted formal stand-downs with their personnel to discuss this event and its significance. The stand-downs included similar talking points to the Operations stand-downs. The stand-downs also included management expectations for procedural compliance.

Site Nuclear Assurance conducted a detailed survey to confirm that the message from the Operations and other site department standdown meetings was received by site personnel. A very high percentage (>98.6%) of the persons sampled indicated they had received the message by responding correctly to the six specific questions on management expectations.

Licensed personnel involvement and observation of tests that have significant effects on components important to safety of the plant are now required.

Shift Managers have conducted one-on-one interviews with their personnel in an effort to find any other similar procedure issues that crews are working around. Expectations for verbatim compliance continue were stressed. Expectations for being more attentive to plant material condition during rounds and ownership of the plant were also stressed.

Operations management was present at the next two diesel generator runs on December 9 and 15, 1997, and validated the time required to perform the surveillance instruction as written to ensure that both fuel oil pumps started as required in the "AUTO" position.

Because management oversight of AUO rounds has improved performance in that area, a similar effort to overview performance of Operations surveillances will be initiated.

Other site departments will select a sample of surveillances performed by their organization. The chosen sample surveillances will be observed by plant management during performance and will be chosen based on their complexity and possible opportunities to identify other similar issues.

VI. ADDITIONAL INFORMATION

A. Failed Components

1. Safety Train Inoperability

None

2. Component/System Failure Information

a. Method of Discovery of Each Component or System Failure:

There were no component/system failures due to this event.

b. Failure Mode, Mechanism, and Effect of Each Failed Component:

There were no component/system failures due to this event.

c. Root Cause of Failure:

There were no component/system failures due to this event.

d. For Failed Components With Multiple Functions, List of Systems or Secondary Functions Affected:

There were no component/system failures due to this event.

e. Manufacturer and Model Number of Each Failed Component:

There were no component/system failures due to this event.

B. Previous Similar Event

A review of the previously submitted WBN LERs identified one similar event (LER 390/96-010 submitted on April 25, 1996) involving Emergency Gas Treatment System main control room handswitches found in the wrong position. That event differs from the event being reported in this LER in that the cause for the EGTS handswitches was determined to be related to a specific surveillance performance. Since the cause for this event could not be related to particular work activities, no conclusive comparison can be drawn.

VII. COMMITMENTS

The actions committed to be implemented in response to this event are tabulated in Section V, Corrective Actions and will be implemented prior to February 16, 1998.